Human health risks: Impact of pesticide application

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This article reviews the application of pesticides and discusses their associated health risks. Data showed that large quantities of pesticides are used in Gaza Strip and the quantities are increased annually. Analyzing data indicates that large numbers of pesticides are used for controlling variety of pests. Some pesticides are restricted by law but are available in the local market. Classification of pesticides according to its biological activity indicates that insecticides are largely used among other pesticides. Reviewing the acute poisonous cases in health records indicated that acute toxic cases were among local farmers and the acute toxic cases increased annually indicating direct health risks associated with pesticide use. In addition, number of congenital malformation among newborns increased annually indicating indirect health risks. Moreover, number of cancer cases in Khan Younis governorate indicates a positive association with pesticide use. Classification of pesticides according to WHO standards identified extreme toxic pesticides (e.g parathion), highly toxic (dichlorvos), moderately toxic (malathion) and less toxic ones. These pesticides have a wide range of octanol-water partitioning coefficient (Kow, log P) values (~0.8 - 6.6), which may result in a variety of storage and transport patterns in human bodies. A pesticide with high Kow log P value (hydrophobic) such as fenvalerate can be stored in fat containing particles and released in milk secretion exposing fetus, mother, and infants to health risks. A satisfactory solution to these problems is implementation of restriction measures and performance of pesticide residue analysis of food.

Biography

Yasser El-Nahhal has completed his PhD at the age of 39 years from The Hebrew University of Jerusalem, and Postdoctoral studies from Michigan State University-USA and from Kiel University Germany of Environmental Chemistry. He is Assistant Professor at The Islamic University of Gaza. He has published more than 50 papers in reputed journals and serving as an editorial board member of repute.

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